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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,959	03/23/2004	Mukul R. Prasad	073338.0172 (03-52027 FLA	4100
5073	7590	04/21/2006	EXAMINER LAM, NELSON C	
BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980			ART UNIT 2825	
PAPER NUMBER				

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No. 10/807,959	Applicant(s) PRASAD ET AL.	
	Examiner Nelson Lam	Art Unit 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' amendment to 10/807,959 has been examined. Claims 1-25 are pending.

Applicant's Amendment is not considered persuasive and the applicable rejections from the prior office action are incorporated herein.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the **first** paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In the specification, applicants do not describe or explain a "third engine". For examination purposes, third engine is interpreted as a method for pre-determining an order for watched literal selection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

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351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1-25 are rejected under 35 U.S.C. 102(e)** as being anticipated by Moskewicz et al. (US Patent Application Publication US 2003/0084411).

As per **claim 1**, Moskewicz discloses a system for scheduling events in a Boolean satisfiability (SAT) solver, the system comprising:

a first engine operable to collect one or more first-order statistics on a search for a valid solution to an SAT problem (Abstract; [0009]; [0052]; [0054]);

a second engine operable to derive one or more second-order statistics on the search from the one or more first-order statistics ([0102]; [0110]; [0114]); and

a third engine operable to schedule events in the search according to one or more of the second-order statistics (Fig. 1; [0069]).

As per **claim 2**, Moskewicz discloses the system of claim 1, wherein the events are restarts ([0115]; [0132]).

As per **claim 3**, discloses the system of claim 1, wherein the events are variable reorderings (Fig. 1; [0069]; [0076]; [0079]; [0116]).

As per **claim 4**, Moskewicz discloses the system claim 1, wherein a first one of the first-order statistics indicates a first number of conflicts since a particular event and a second one of the first-order statistics indicates a second number of decisions since the particular event ([0009]; [0014]; [0016]; [0017]; [0052]; [0053]; [0054]).

As per **claim 5**, Moskewicz discloses the system of claim 4, wherein the particular event is a start or a last restart ([0015]; [0016]).

As per **claim 6**, Moskewicz discloses the system of claim 4, wherein the particular event is a variable ordering or a last variable reordering ([0016]; [0076]; [0079]).

As per **claim 7**, Moskewicz discloses the system of claim 1, wherein at least one of the second-order statistics is a conflict-to-decision ratio (CDR) ([0052]; [0053]; [0054]).

As per **claim 8**, Moskewicz discloses the system of claim 1, wherein the search for a valid solution to the SAT problem is associated with electronic design automation (EDA) ([0004]; [0013]; [0015]; [0030]).

As per **claim 9**, Moskewicz discloses a method for scheduling events in a Boolean satisfiability (SAT) solver, the method comprising:

collecting one or more first-order statistics on a search for a valid solution to an SAT problem (Abstract; [0009]; [0052]; [0054]);

deriving one or more second-order statistics on the search from the one or more first-order statistics ([0102]; [0110]; [0114]); and

scheduling events in the search according to one or more of the second-order statistics (Fig. 1; [0069]).

As per **claim 10**, Moskewicz discloses the method of claim 9, wherein the events are restarts ([0115]; [0132]).

As per **claim 11**, Moskewicz discloses the method of claim 9, wherein the events are variable reorderings (Fig. 1; [0069]; [0076]; [0079]; [0116]).

As per **claim 12**, Moskewicz discloses the method of claim 9, wherein a first one of the first-order statistics indicates a first number of conflicts since a

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particular event and a second one of the first-order statistics indicates a second number of decisions since the particular event ([0009]; [0014]; [0016]; [0017]; [0052]; [0053]; [0054]).

As per **claim 13**, Moskewicz discloses the method of claim 12, wherein the particular event is a start or a last restart ([0015]; [0016]).

As per **claim 14**, Moskewicz discloses the method of claim 12, wherein the particular event is a variable ordering or a last variable reordering ([0016]; [0076]; [0079]).

As per **claim 15**, Moskewicz discloses the method of claim 9, wherein at least one of the second-order statistics is a conflict-to-decision ratio (CDR) ([0052]; [0053]; [0054]).

As per **claim 16**, Moskewicz discloses the method of claim 9, wherein the search for a valid solution to the SAT problem is associated with electronic design automation (EDA) ([0004]; [0013]; [0015]; [0030]).

As per **claim 17**, Moskewicz discloses logic for scheduling events in a Boolean satisfiability (SAT) solver, the logic encoded in media and when executed operable to:

collect one or more first-order statistics on a search for a valid solution to an SAT problem (Abstract; [0009]; [0052]; [0054]);

derive one or more second-order statistics on the search from the one or more first-order statistics ([0102]; [0110]; [0114]); and

schedule events in the search according to one or more of the second-order statistics (Fig. 1; [0069]).

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As per **claim 18**, Moskewicz discloses the logic of claim 17, wherein the events are restarts ([0115]; [0132]).

As per **claim 19**, Moskewicz discloses the logic of claim 17, wherein the events are variable reorderings (Fig. 1; [0069]; [0076]; [0079]; [0116]).

As per **claim 20**, Moskewicz discloses the logic of claim 17, wherein a first one of the first-order statistics indicates a first number of conflicts since a particular event and a second one of the first-order statistics indicates a second number of decisions since the particular event ([0009]; [0014]; [0016]; [0017]; [0052]; [0053]; [0054]).

As per **claim 21**, Moskewicz discloses the logic of claim 20, wherein the particular event is a start or a last restart ([0015]; [0016]).

As per **claim 22**, Moskewicz discloses the logic of claim 20, wherein the particular event is a variable ordering or a last variable reordering ([0016]; [0076]; [0079]).

As per **claim 23**, Moskewicz discloses the logic of claim 17, wherein at least one of the second-order statistics is a conflict-to-decision ratio (CDR) ([0052]; [0053]; [0054]).

As per **claim 24**, Moskewicz discloses the logic of claim 17, wherein the search for a valid solution to the SAT problem is associated with electronic design automation (EDA) ([0004]; [0013]; [0015]; [0030]).

As per **claim 25**, Moskewicz discloses a system for scheduling events in a Boolean satisfiability (SAT) solver, the system comprising:

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means for collecting one or more first-order statistics on a search for a valid solution to an SAT problem (Abstract; [0009]; [0052]; [0054]);

means for deriving one or more second-order statistics on the search from the one or more first-order statistics ([0102]; [0110]; [0114]); and

means for scheduling events in the search according to one or more of the second-order statistics (Fig. 1; [0069]).

Remarks

6. Regarding the rejection under 35 USC 112(1), Applicants have cited Figures 1, 2 and 3 and specification cites as support of the limitation of a third engine. However, Figures 1, 2 and 3 and the specification cites do not disclose or suggest a third engine. Specifically, Figures 1, 2 and 3 along with the specification citations only describe a first and second engine and fail to disclose or suggest a third engine. Therefore, the rejection under 35 USC 112(1) is maintained.

Applicants state that Moskewicz does not teach or suggest the limitation of deriving one or more second-order statistics on the search from the one or more first-order statistics and scheduling events in the search. Examiner has already identified and referenced explanatory cites reading on these limitations in the non-final office action. Therefore, the amended claims are rejected over the prior art of record.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Lam whose telephone number is 571 272-8318. The examiner can normally be reached on Monday-Friday from 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571 272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

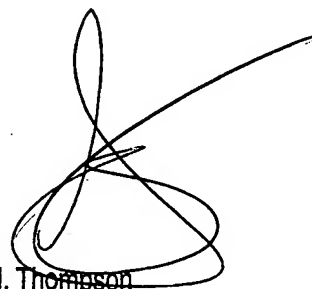
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Nelson Lam

Nelson Lam
Assistant Examiner
Art Unit 2825

A handwritten signature in black ink, consisting of a large, stylized loop with a long, sweeping horizontal stroke extending to the right.

A. M. Thompson
Primary Examiner
Technology Center 2800